



Constantine Engineering Laboratories Company

70 CONSTANTINE DRIVE
MAHWAH, NEW JERSEY
PHONE: 201 - 327-1123

March 11, 1966

Mr. T. Nelson
Systems Consultant
Box 32
Schooleys Mountain, N. J.

Dear Mr. Nelson:

Dynayoke is our NEW fast yoke, a natural companion for our NEW all-silicon high speed deflection amplifier. Image Orthicon and Vidicon coils, X-Y microscopes, Two-Slit Spot Analyzers and the NEW Celco Magnetic Lens will be on display at the IEEE Show, Booth 2W00.

The Celco Two-Slit Spot Analyzer answers that perennial question. "What size is the CRT spot?" Interchangability with the X-Y microscope converts the Two-Slit into a MICRO-SCANNER. NOW MEASURE INCREMENTAL LINEARITY

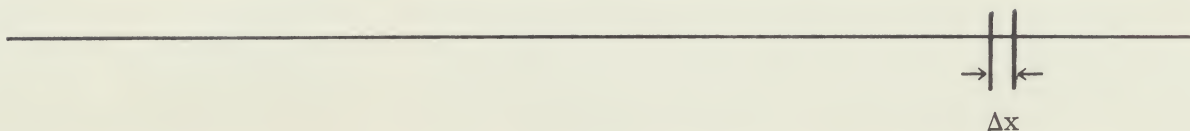
The Dynayoke recovers to 0.1% in 6 μ s. The NEW Celco Deflection Amplifier, with regulated power supply and built in current limiting, will switch 12 Amperes in less than 10 μ s with a 25 μ h yoke.

Visit us, we'll show you more, or work on your display application.

Very truly yours,

John M. Constantine
President and Yoke Designer

JMC:pn



$\frac{\Delta x}{\Delta i}$ on a flat face CRT increases center to edge

Want to measure it precisely? — elegantly?

Get the Two-Slit Linearity Micro-Scanner.



Constantine Engineering Laboratories Company

YOKES

FOCUS COILS

DEFLECTION AMPLIFIERS

Mahwah, N. J. 201-327-1123

Upland, Cal. 714-982-0215

PRECISION

Celco

COMPONENTS

TYPE I. O. 680

3" IMAGE ORTHICON

DEFLECTION ASSEMBLY

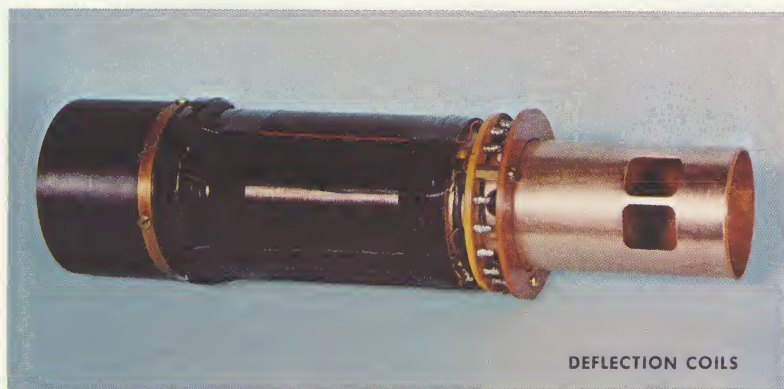
STANDARD TV

3" IMAGE ORTHICON ASSEMBLY

DEFLECTION
YOKE

FOCUS
COIL

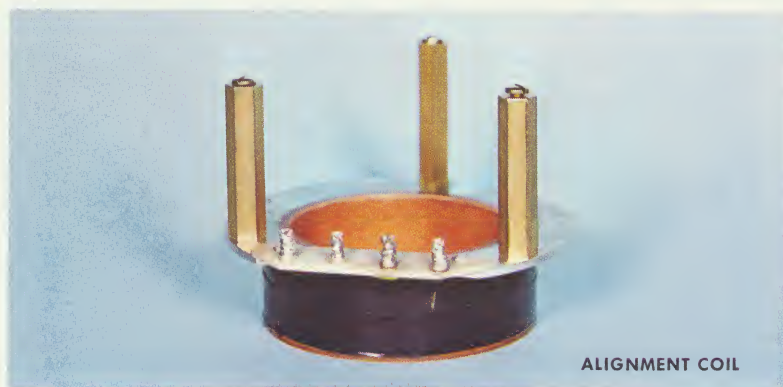
ALIGNMENT
COIL



Deflection Assembly specially designed for 3" Image Orthicon Camera Tubes. Magnetic and Faraday shielding. Adjustable skew provision.



Focus Coil for 3" Image Orthicons designed for nominally 75 gauss focusing field at center. Electrostatic shielding with appropriate ground connections included.



Alignment Coil Assembly designed for 0-3 gauss transverse deflecting fields. Horizontal and Vertical coils included for 3" TV Image Orthicons.

Celco

Constantine Engineering Laboratories Company

"For the latest in the science of Electron Beam Control"

PACIFIC DIVISION
Upland, California
Tel. 714-982-0215
TWX 714-556-9550

SOUTHERN DIVISION
Miami, Florida
Tel. 305-751-1132

EASTERN DIVISION
Mahwah, New Jersey
Tel. 201-327-1123
TWX 201-327-1435

COIL DATA for 3" IMAGE ORTHICON CAMERA TUBES

DEFLECTION COIL DATA

TYPE No.	L mH	R max. Ohms	I Amps
PUSH-PULL HALF AXIS			
I. O. 680-P660	.025	.2	4.4
-P599	.11	.6	2.1
-P560	.25	2.0	1.4
-P530	.50	3.0	.99
-P481	1.4	10.	.58
-P450	3.0	12.	.40
-P400	10.	40.	.22
-P352	30.	80.	.15

SINGLE-ENDED FULL AXIS

I. O. 680-S660	.025	.1	4.4
-S599	.11	.3	2.1
-S560	.25	1.0	1.4
-S530	.50	1.5	.99
-S481	1.4	5.0	.58
-S450	3.0	6.0	.40
-S400	10.0	20.0	.22
-S352	30.	40.	.15

I = Current to deflect 1/2 side at 500 V accelerating potential

Distributed Capacitance 25-150 pF

FOCUS COIL DATA

TYPE No.	L mH	R max. Ohms	I mA
F370		20	1100
F326		55	480
F285		150	320
F225		575	160
F174		1850	80

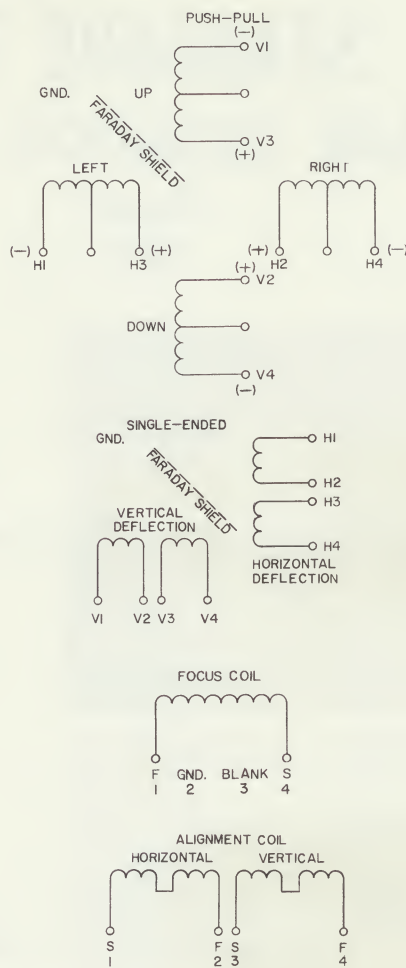
I = Current for 75 gauss at center of focus coil

ALIGNMENT COIL DATA

A260	4	25	260
A314	18	75	150
A280	72	300	75

I = Current required in one axis to produce 3 gauss

WIRING DIAGRAMS



YOKE TERMINALS

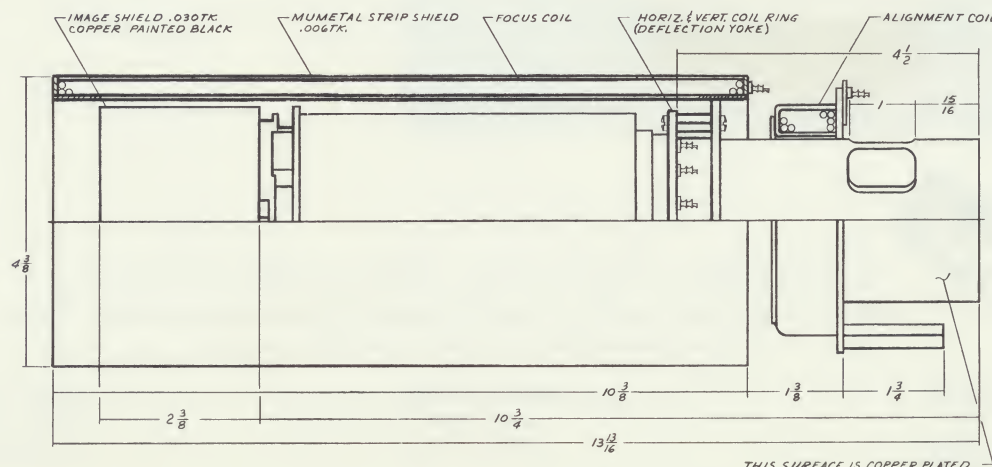
Parallel Connections
H1 (H1, H3 connected)
H2 (H2, H4 connected)
V1 (V1, V3 connected)
V2 (V2, V4 connected)

Series Connections
H1
H4 (H2, H3 connected)
V1
V4 (V2, V3 connected)

Socket No.	Element	Board Marking
1	Grid	G6
2	Photocathode	PC
3	—	—
4	—	—
5	Grid	G5
6	Target	T
7	—	—

STANDARD TV SINGLE-ENDED 3" I.O. COIL DATA

GROUP No.	TYPE NUMBER	HORIZONTAL COILS			VERTICAL COILS			FOCUS COIL		ALIGN. COIL		WEIGHT lbs.
		Induct. mH	Res. ohms	I _{p-p} amps	Induct. mH	Res. ohms	I _{p-p} amps	Res. ohms	I _f mA for 75 G	Res. ohms	I _a mA for 3 G	
G1	I.O. 680-S481/352-F174-A314	1.4	5	1.15	30	40	.3	1850	80	75	150	10
G2	I.O. 680-S599/352-F370-A314	.11	.3	4.1	30	40	.3	20	1100	75	150	10



PRECISION



COMPONENTS

FAST

± 40 VOLT

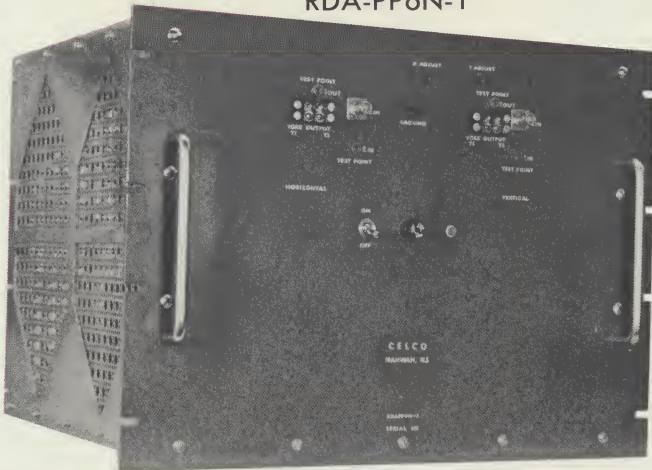
ALL SILICON DEFLECTION DRIVERS

THE NEWEST, FASTEST STANDARD AMPLIFIER IN THE CELCO LINE

12 Amp Change in less than 9 μ sec

0.02% linearity

RDA-PP6N-1



Deflection Amplifier and Regulated Quadru-Power
Supplies with Safety Current Limiting

- Direct Conversion: E_{in} to I_{out}
- dc to Pulses and Complex Waveforms
- Compatible with Single-Ended Yokes
- No Synthesizing Networks Required
- Self Contained, Needs only 115 Vac
- Minimum Crosstalk
- Convenient Monitoring Points
- Saves Engineering Costs
- Reduce Prototype Lead Times
- Low Ripple

SPECIFY CELCO YOKES AND AMPLIFIERS

Radar

Experimental and Development Projects

High Resolution Flying Spot Scanners

Camera Tube Deflection

Information Retrieval

Computer Displays

Special Monitors

Call or Write for Engineering Application Information



Constantine Engineering Laboratories Company

"For the latest in the science of Electron Beam Control"

PACIFIC DIVISION
Upland, California
Tel. 714-982-0215
TWX 714-556-9550

SOUTHERN DIVISION
Miami, Florida
Tel. 305-751-1132

EASTERN DIVISION
Mahwah, New Jersey
Tel. 201-327-1123
TWX 201-327-1435

± 40 VOLT ALL SILICON DEFLECTION AMPLIFIER
MODEL RDA-PP6N-1
with
REGULATED POWER SUPPLY

	CHARACTERISTICS
POWER INPUT	115V 60Hz 8A
SOURCE IMPEDANCE	Specified at 1 Kohm for most applications. Source must be capable of supplying 100 μ A base current plus 10K loading
INPUT IMPEDANCE	Input shunted with 10K resistor. Optimum source impedance is function of yoke impedance. Consult our Engineering Dept. regarding your application.
SIGNAL AMPLITUDE	± 3.0 volts
SIGNAL INPUT WAVEFORMS	dc to pulses, sawtooth, sine, square, writing strokes, resolved sweeps, random positioning and complex waveforms. Combinations of above may be summed at input.
OUTPUT CURRENT THROUGH YOKE	± 6 amperes, 12 amperes P-P
dc LINEARITY	± 0.02%, best straight line
STEP RESPONSE	Depends on yoke inductance. $T(\mu s) = \frac{L(\mu H) \times I(\text{amps})}{E(\text{volts})} \pm 1.0 \mu\text{sec}$ $E = 35V$
FLYBACK TIME	Typically same as step response. (Less than 10 μ sec for 12 amp change into 25 μ H yoke)
SWEEP LINEARITY	Function of yoke inductance and fastest sweep. (See oscillograms on CELCO Sheet A3)
SMALL SIGNAL SINE WAVE RESPONSE	Flat within 3 db from dc to 250 KHz at 250 mA P-P with 25 μ H yoke and source impedance of 1 Kohm. Feedback control adjusted for optimum.
OPERATING TEMPERATURE RANGE	± 6.0 amps, 50% duty cycle; 0-50°C ± 6.0 amps, dc; 0-25°C ± 5.0 amps, dc; 0-50°C
TEMPERATURE DRIFT	0-50°C, 0.2 mA/°C
MECHANICAL DATA	Width 19" Height 14" Depth 15¾" Weight 95 lb.
ELECTRICAL DATA	Three prong plug with ground

CELCO Solid State Amplifiers, Deflection Yokes and Focus Coils comprise an integrated group of high performance components for CRT beam control.

**SPECIAL DESIGNS
TO CUSTOMER REQUIREMENTS**

- Separate Power Supply and Amplifier for O.E.M.
- Special Voltages for Special Scans
- Special Responses and Current Ranges
- Special Input Circuitry for Voltage Clipping, Centering, Wave Shaping, Linearity Correction
- MIL Version to Customers Negotiated Requirements
- 400 Cycle Inputs

